

USER MANUAL

KV6222A-R2, KV6224A-R2

DISPLAYPORT KVM DESKTOP SWITCHES

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM



TABLE OF CONTENTS

1. SPECIFICATIONS.....	3
2. OVERVIEW.....	5
2.1 Introduction.....	5
2.2 What's Included.....	5
2.3 Hardware Description.....	5
2.3.1 KV6222A-R2.....	5
2.3.2 KV6224A-R2.....	7
3. INSTALLATION.....	9
3.1 Connection Diagram.....	9
3.2 Installation Steps.....	10
4. OPERATION.....	11
4.1 Front-Panel Pushbuttons.....	11
4.2 Keyboard Hotkeys.....	11
5. COMMANDS QUICK REFERENCE GUIDE.....	12
APPENDIX A. REGULATORY INFORMATION.....	14
A.1 FCC Statement.....	14
A.2 CE Statement.....	14
A.3 RoHS.....	14
A.4 NOM Statement.....	15
APPENDIX B. DISCLAIMER/TRADEMARKS.....	16
B.1 Disclaimer.....	16
B.2 Trademarks Used in this Manual.....	16



CHAPTER 1: SPECIFICATIONS**TABLE 1-1. SPECIFICATIONS**

SPECIFICATION	DESCRIPTION
Physical	
Connectors	KV6222A-R2: User Interface: (2) DisplayPort, (2) USB Type A female for HID devices, (1) USB Type B female for USB 2.0 hub, (2) 3.5-mm Audio / Mic jack; Computer Interface: (4) DisplayPort, (2) USB Type B female, (4) 3.5-mm Audio / Mic jack; Other: (1) 2.1-mm barrel plug for power; KV6224A-R2: User Interface: (2) DisplayPort, (2) USB Type A female for HID devices, (1) USB Type B female for USB 2.0 hub, (2) 3.5-mm Audio / Mic jack; Computer Interface: (8) DisplayPort, (4) USB Type B female, (8) 3.5-mm Audio / Mic jack; Other: (1) 2.1-mm barrel plug for power;
Users x Computers	KV6222A-R2-R2: 1 x 2; KV6224A-R2: 1 x 4
User Interface	KV6222A-R2: (2) Computer buttons; KV6224A-R2: (4) Computer buttons
LED Interface	LEDs built into each button to show selection/USB
Operating System Support	All Windows, MAC, Sun, Linux/Unix (Windows NT is not supported because of USB limitations)
User Interface	Direct
Rackmount Kits	N/A
Dimensions	KV6222A-R2: 2.6"H x 6.4"W x 3.95"D (6.6 x 16.3 x 10.1 cm); KV6224A-R2: 2.6"H x 10"W x 3.95"D (6.6 x 25.4 x 10.1 cm)
Weight	KV6222A-R2: 1.98 lb. (0.9 kg); KV6224A-R2: 2.46 lb. (1.1 kg)
Operation	
PC Selection	Hotkeys, Pushbuttons
Hotkey Support	Scroll Lock, Scroll Lock, Port Number
DDC Support	Real Time EDID Emulation Support
Power	
Power Supply	Input: 100 to 240 VAC, 50/60 Hz, 0.8 A; Output: 9 V, 2 A

TABLE 1-1 (CONTINUED). SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Environmental	
Storage Temperature	-4 to +140° F (-20 to +60° C)
Operating Humidity	0 to 90% relative humidity, noncondensing
Compliance	
FCC	Part 15, Class A
TUV	Yes
CE	Yes
UL Number	E202402
CSA	N/A
RoHS	Yes
WEEE	Yes



CHAPTER 2: OVERVIEW

2.1 INTRODUCTION

The KV6222A-R2 or KV6224A-R2 is a 2- or 4-port dual monitors DisplayPort USB KVM switch designed for sharing two or four flat panel displays between two or four multimedia computers. You can fully control two or four dual-head PCs using only one keyboard, mouse, and dual displays. True Transparent USB emulation technology enables the switch to work with all types of advanced keyboards and mice. The technology supports active real-time EDID Emulation, in other words, as long as the attached display is connected during operation, all computers will be able to use the monitor profile properly whether the KVM port is selected or not. DisplayPort version 1.2 technology provides sufficient bandwidth needed for 4K ultra-high definition displays.

2.2 WHAT'S INCLUDED

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

KV6222A-R2:

- ♦ (1) 2-Port DisplayPort Dual-Head KVM Desktop Switch
- ♦ (1) universal power supply with country-specific adapter clips
- ♦ (1) Quick Installation Guide

KV6224A-R2:

- ♦ (1) 4-Port DisplayPort Dual-Head KVM Desktop Switch
- ♦ (1) universal power supply with country-specific adapter clips
- ♦ (1) Quick Installation Guide

2.3 HARDWARE DESCRIPTION

2.3.1 KV6222A-R2

Figures 2-1 and 2-2 show the front and back panels of the 2-port switch. Table 2-1 describes its components.

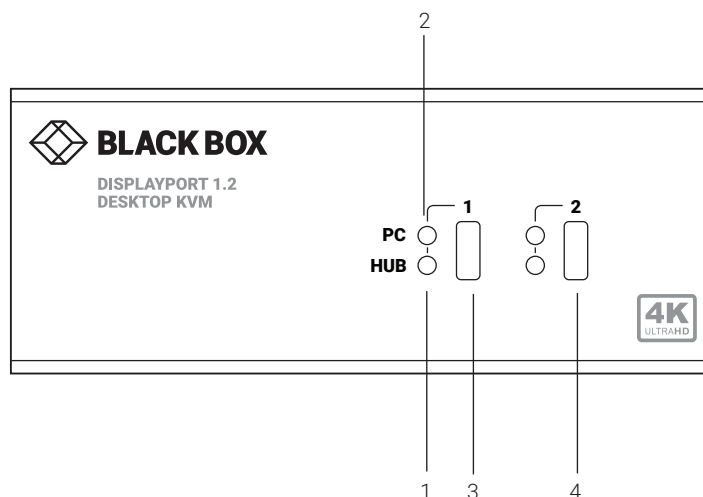


FIGURE 2-1. FRONT PANEL OF THE KV6222A-R2

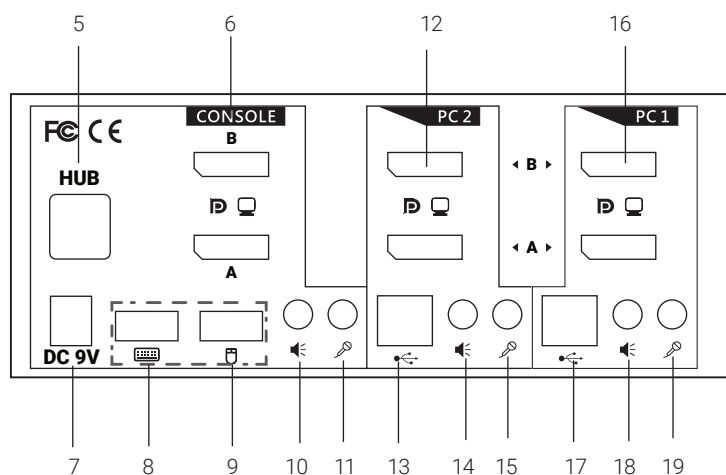
CHAPTER 2: OVERVIEW

FIGURE 2-2. BACK PANEL OF THE KV6222A-R2

TABLE 2-1. KV6222A-R2 COMPONENTS

NUMBER IN FIGURE 2-1 OR 2-2	COMPONENT	DESCRIPTION
1	Selected hub indicator	Lights to indicate selected hub
2	Selected PC/server indicator	Lights to indicate selected PC/server
3, 4	Port select buttons	Selects the port you want to switch
5	(2) USB Type A connectors	Links to USB hubs
6	(2) DisplayPort connectors	Link to consoles B and A
7	Power connector	Links to 5-VDC power supply
8	USB Type A connector	Links to keyboard
9	USB Type A connector	Links to mouse
10	Audio jack	Links to console speakers
11	Audio jack	Links to console microphone
12	(2) DisplayPort connectors	Links to PC2 DisplayPort B and A
13	USB Type B connector	Links to PC2
14	Audio jack	Links to PC2 speaker
15	Audio jack	Links to PC2 microphone
16	(2) DisplayPort connectors	Links to PC1 DisplayPort B and A
17	USB Type B connector	Links to PC1
18	Audio jack	Links to PC1 speaker
19	Audio jack	Links to PC1 microphone

2.3.2 KV6224A-R2

Figures 2-3 and 2-4 show the front and back panels of the 4-port switch. Table 2-2 describes its components.

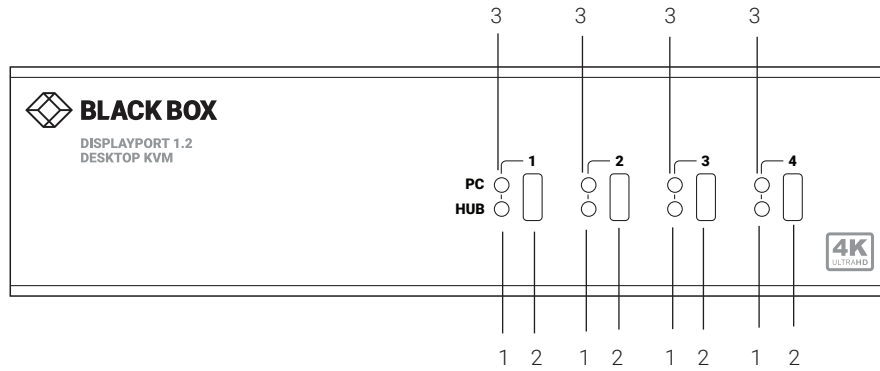


FIGURE 2-3. FRONT PANEL OF THE KV6224A-R2

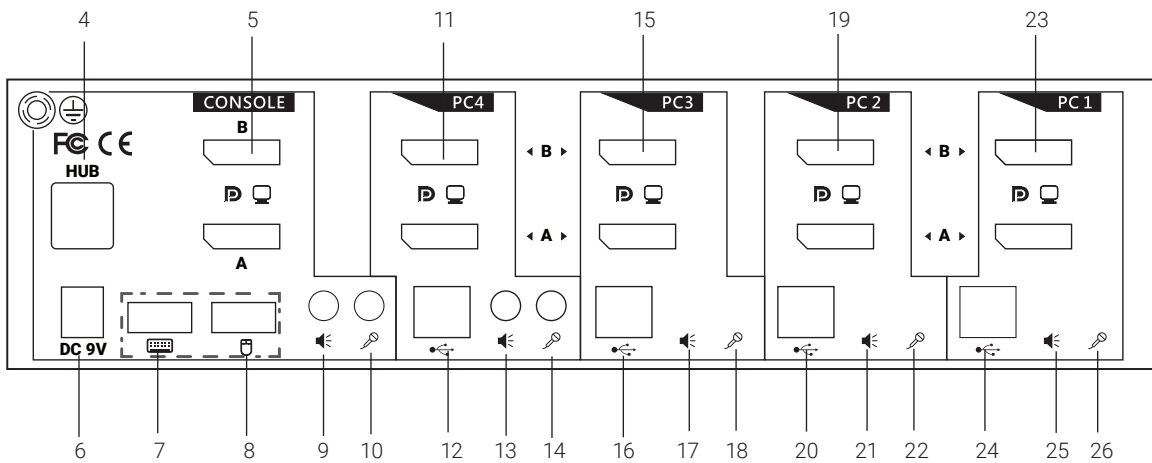


FIGURE 2-4. BACK PANEL OF THE KV6224A-R2

CHAPTER 2: OVERVIEW**TABLE 2-2. KV6224A-R2 COMPONENTS**

NUMBER IN FIGURE 2-3 OR 2-4	COMPONENT	DESCRIPTION
1	Selected hub indicators	Lights to indicate selected hub
2	Port select buttons	Selects the port you want to switch
3	Selected PC/server indicator	Lights to indicate selected PC/server
4	(2) USB Type A connectors	Link to USB hubs
5	(2) DisplayPort connectors	Links to consoles B and A
6	Power connector	Links to 5-VDC power supply
7	USB Type A connector	Links to keyboard
8	USB Type A connector	Links to mouse
9	Audio jack	Links to console speakers
10	Audio jack	Links to console microphone
11	(2) DisplayPort connectors	Links to PC4 DisplayPort B and A
12	USB Type B connector	Links to PC4
13	Audio jack	Links to PC4 speaker
14	Audio jack	Links to PC4 microphone
15	(2) DisplayPort connectors	Links to PC3 DisplayPort B and A
16	USB Type B connector	Links to PC3
17	Audio jack	Links to PC3 speaker
18	Audio jack	Links to PC3 microphone
19	(2) DisplayPort connectors	Links to PC2 DisplayPort B and A
20	USB Type B connector	Links to PC2
21	Audio jack	Links to PC2 speaker
22	Audio jack	Links to PC2 microphone
23	(2) DisplayPort connectors	Links to PC1 DisplayPort B and A
24	USB Type B connector	Links to PC1
25	Audio jack	Links to PC1 speaker
26	Audio jack	Links to PC1 microphone



CHAPTER 3: INSTALLATION

3.1 CONNECTION DIAGRAM

The diagram illustrated here is an example of KV6224A-R2, the actual application may vary. All illustrated computer, accessories and monitors are not included in the package, it is for reference only.

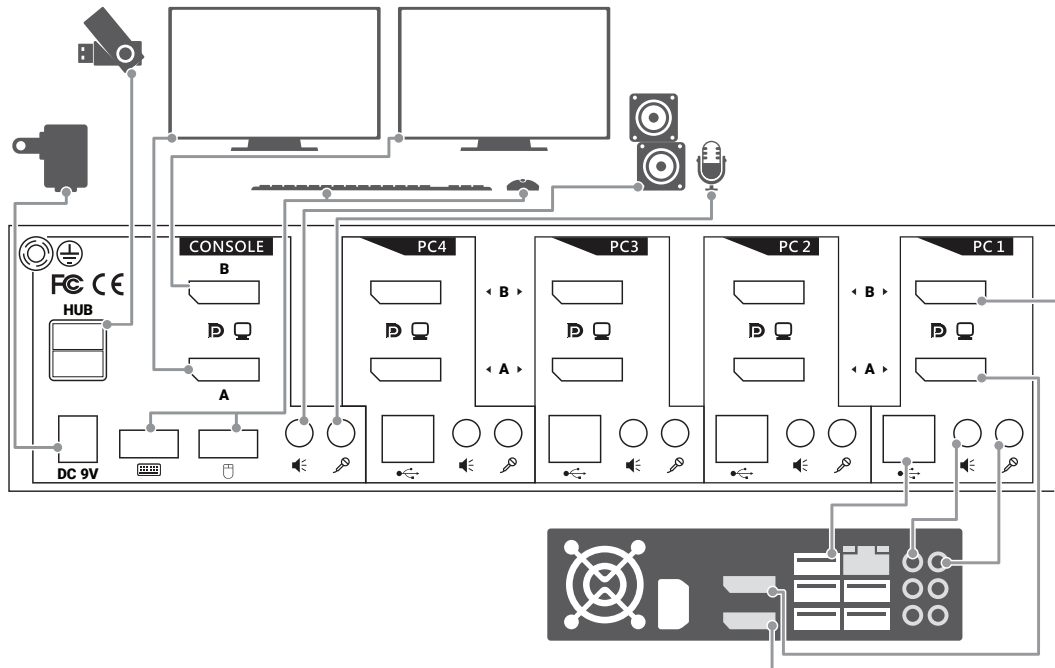


FIGURE 3-1. TYPICAL CONNECTIONS

CHAPTER 3: INSTALLATION

3.2 INSTALLATION STEPS

1. Power up your KVM Switch by connecting the external power adapter to it.
2. Connect the shared USB keyboard, mouse, two DisplayPort monitors, speaker/headphone and microphone to corresponding ports on the console section of the KVM Switch.

NOTE: The lower two USB ports are for keyboard and mouse.

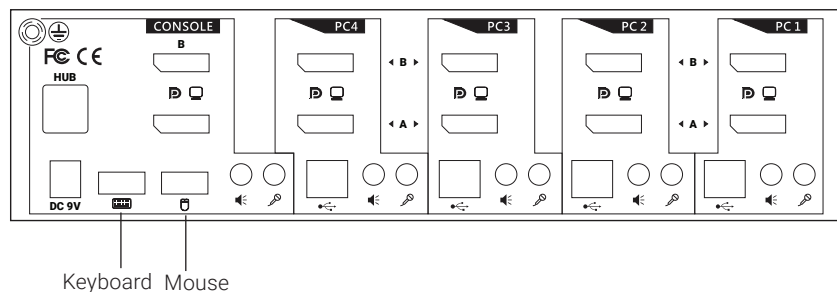


FIGURE 3-2. KEYBOARD AND MOUSE CONNECTIONS

3. Connect each KVM PC port to computers, using two DisplayPort cables (male to male), one USB cable (type A to type B) and one audio and microphone combo cable (male to male).
4. Connect your USB devices via a USB hub to the USB hub port (on the left).

CHAPTER 4: OPERATION

You can control the KVM switch via either front-panel pushbuttons or keyboard hotkeys.

4.1 FRONT-PANEL PUSHBUTTONS

Front-panel buttons allow you to directly control the KVM switching operation. Simply press the button to toggle to the selected PC port (together with hub port control and/or audio/mic port, if binding is enabled). By default, PC port switching, hub port control and audio/ mic port switching are bound together, unless you specify the audio to be fixed to a specific port.

4.2 KEYBOARD HOTKEYS

A keyboard hotkey sequence consists of at least three specific keystrokes: See the Quick Reference Guide in Chapter 5.

Hotkey sequence = [ScrLk]* + [ScrLk] * + Command key(s)

* User-definable = SCROLL LOCK, CAPS, ESC, F12 or NUM LOCK

Hotkey preceding sequence configuration: For users who want to use a preceding sequence other than two consecutive Scroll Locks, there is also one convenient way to configure it.

1. Press ScrollLock + ScrollLock + H, then two beeps will signal readiness for new preceding sequence selection [or Press and hold down the last front-panel button (Button 2 or Button 4) until you hear two beeps, then release the button.]
2. Select and press the key you would like to use as your preceding sequence (SCROLL LOCK, CAPS, ESC, F12 or NUM LOCK keys are available for selection) and you'll hear a beep for selection confirmation. Now you can use the new preceding sequence to execute your hotkey commands.

NOTE: Each keystroke within a hotkey sequence should be pressed within 2 seconds. Otherwise, the hotkey sequence will not be validated.

CHAPTER 5: COMMANDS QUICK REFERENCE GUIDE**TABLE 5-1. SWITCHING COMMANDS**

COMMAND	HOTKEYS	FRONT-PANEL BUTTON	DESCRIPTION
Select PC Port ²	ScrLk + ScrLk + (x) x = 1-2/ 1-4 for PC port number	Press the corresponding button to select the active PC port.	Select the active PC port (Jointly select PC port / hub port control / audio mic, if binding is enabled)
Select Hub Port Control ²	ScrLk + ScrLk + (Fx) Fx = F1-F2/ F1-F4 (Fx is a function key) x = 1-2/ 1-4 for hub port number	Press the button to toggle the specific PC+USB hub port control. (It works only if PC port/ hub port control binding is enabled.)	Select the PC port that control all USB hub ports (Jointly select PC & hub port control, if PC/ hub port control binding is enabled)
Select Audio & Mic Control ³	ScrLk + ScrLk + (Fy) Fy = F5-F6/ F5-F8 (Fy is a function key) y = 5-6/ 5-8 for audio & mic port number	N/A	Select the active audio & mic port (Jointly select PC & audio & mic port, if binding is enabled)
Bind PC and Hub Port Control Switching ²	ScrLk + ScrLk + Z	N/A	Enable the binding of PC port and hub port control switching. (Once this feature is enabled, any PC and/or hub port control switching is bound together) (factory default)
Unbind PC and Hub Port Control Switching ²	ScrLk + ScrLk + X	N/A	Disable the binding of PC port and hub port control switching
Bind PC and Audio & Mic Switching ³	ScrLk + ScrLk + Q	N/A	Enable the binding of PC port and audio & mic switching. (Once this feature is enabled, any PC and/or audio & mic switching is bound together) (factory default)
Unbind PC and Audio & Mic Switching ³	ScrLk + ScrLk + W	N/A	Disable the binding of PC port and audio & mic switching
Previous PC port ²	ScrLk + ScrLk + arrow up	N/A	Select the previous connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Next PC port ²	ScrLk + ScrLk + arrow down	N/A	Select the next connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Previous PC port	ScrLk + ScrLk + (Backspace)	N/A	Toggle between the previous port and current port
Beep Sound On/Off	ScrLk + ScrLk + B	N/A	Toggle on/off the beep sound while autoscanning

NOTES:

1. The USB keyboard hotkeys allows you a faster and broader control for your KVM switching operation in addition to the front-panel button. If you have configured a hotkey preceding sequence other than two consecutive scroll locks, here you should change your hotkey sequence accordingly. (For preceding sequence key configuration, refer to the Switching Commands table.)
2. When the binding of PC & USB hub port control switching is enabled by the hotkey sequence: ScrLk + ScrLk + Z, any PC and hub port control switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + X.
3. When the binding of PC and audio & mic switching is enabled by the hotkey sequence: ScrLk + ScrLk + Q, any PC and audio & mic switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + W.



CHAPTER 5: COMMANDS QUICK REFERENCE GUIDE

TABLE 5-1 (CONTINUED). SWITCHING COMMANDS

COMMAND	HOTKEYS	FRONT-PANEL BUTTON	DESCRIPTION
Define Hotkey Preceding Sequence	ScrLk + ScrLk + H + (y) y = SCROLL LOCK, CAPS, ESC, F12 or NUM LOCK	Press and hold down last button (Button 2 / Button 4) till two beeps, release the button, then press (y) key	Select the hotkey preceding sequence among 5 alternative keys.
Autoscan	ScrLk + ScrLk + S	N/A	Autoscan through every connected port for quick screen browsing of each port (scan delay = 5 sec.).
Autoscan with Programmable Delay Time	ScrLk + ScrLk + S + (z) z = 0-9 1 10"; 2 20"; 3 30"; 4 40"; 5 50"; 6 60"; 7 70"; 8 80"; 9 90"; 0 100"	N/A	Autoscan with a user-defined delay time within a range of 10-100 seconds
Stop Autoscan	Press any button	N/A	N/A

NOTES:

1. The USB keyboard hotkeys allows you a faster and broader control for your KVM switching operation in addition to the front-panel button. If you have configured a hotkey preceding sequence other than two consecutive scroll locks, here you should change your hotkey sequence accordingly. (For preceding sequence key configuration, refer to the Switching Commands table.)
2. When the binding of PC & USB hub port control switching is enabled by the hotkey sequence: ScrLk + ScrLk + Z, any PC and hub port control switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + X.
3. When the binding of PC and audio & mic switching is enabled by the hotkey sequence: ScrLk + ScrLk + Q, any PC and audio & mic switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + W.

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

This equipment has been tested and found to comply with the regulations for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this Quick Installation Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case, the user will be required to correct the interference at his/her own expense.

A.2 CE STATEMENT

This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

A.3 ROHS

This product is RoHS compliant.



APPENDIX A: REGULATORY INFORMATION

A.4 NOM STATEMENT

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

APPENDIX B: DISCLAIMER/TRADEMARKS

B.1 DISCLAIMER

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

B.2 TRADEMARKS USED IN THIS MANUAL

Black Box and the Black Box logo type and mark are registered trademarks of Black Box Corporation.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.



NOTES

**NEED HELP?
LEAVE THE TECH TO US**

**LIVE 24/7
TECHNICAL
SUPPORT**

1.877.877.2269

Series of horizontal dashed lines for taking notes.

NOTES

NEED HELP?
LEAVE THE TECH TO US

**LIVE 24/7
TECHNICAL
SUPPORT**

1.877.877.2269

Lined area for notes with horizontal dashed lines.



NOTES

**NEED HELP?
LEAVE THE TECH TO US**

**LIVE 24/7
TECHNICAL
SUPPORT**

1.877.877.2269

Horizontal dashed lines for notes.



**NEED HELP?
LEAVE THE TECH TO US**

**LIVE 24/7
TECHNICAL
SUPPORT**

1.877.877.2269

